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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,935	11/17/2000	Xiangxin Bi	2950.16US02	9146

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EXAMINER

FULLER, ERIC B

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 06/28/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Applicati n No.

09/715,935

Applicant(s)

BI ET AL.

Examiner

Eric B Fuller

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--The MAILING DATE of this communication appears n the cover sheet with th correspond nc address --

THE REPLY FILED 19 June 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: the arguments are not persuasive.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 18-61.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8. ☐ The proposed drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.
10. ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

The After-Final Amendment filed on June 19, 2002 has been entered, as it only pertains to updating the status of commonly owned US Patent Applicants.

### ***Response to Arguments***

In the previous Office Action, claims 18-29, 33-42, 44, 46-51, 55-57, and 59-61 were rejected over Akedo et al. in view of Bi et al. The rejection is based on the obviousness of having the nanoparticle stream leaving the reaction chamber of Bi act as the feed stream for Akedo, as Akedo requires nano-sized particles as the inlet. Applicant argues that the feed inlet requires "aerosolized ultrafine powders" and ionized gas and therefore the particle stream described in Bi is not suitable to act as the inlet gas flow 23 of Akedo. Examiner agrees that gas inflow 23 of Akedo requires a mixture of ionized gas and aerosolized ultrafine particles; additionally Bi contains no indication of ionized gas being in the stream. However, the argument is not found persuasive to overcome the rejection in view of the other embodiments of Akedo.

In figure 1 of Akedo, particle stream 5 is leaving aerosolizing chamber as an aerosol, and is later combined with the ionizing gas stream. There is no indication that the gas in the aerosol being fed into the apparatus is ionized. Figure 3 shows a similar embodiment. Moreover, it is taught that the feed stream may either be an aerosol comprising ultrafine particles and ionized gas, or a stream comprising aerosolized

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particles that are later electrostatically charged and accelerated (column 2, lines 61-67). Therefore, Akedo teaches that the aerosolized particles and ionized gas may be supplied separately (as in figures 1 and 3) or supplied together (as in figures 6, 8, and 9). For the situation in where the aerosolized particles are supplied separately from the ionized gas, it would have been obvious that the nanoparticle stream exiting the reactor of Bi would be capable of supplying the ultrafine-particle inlet of Akedo. To use the particle-production process of Bi in place of the aerosolizing chamber in figure 1 of Akedo, or to supply the feed into figure 3, would have been obvious at the time the invention was made to a person having ordinary skill in the art as the particle stream leaving the reactor of Bi comprises nanoparticles and inert gases (column 9, lines 55-65) and therefore is an aerosol. By doing so, one would reap the benefits of the efficient use of resources at high production capacity without sacrificing particle quality.

Applicant alleges, in previous arguments, that these benefits are obtained when producing and collecting the particles and then transferring them to the aerosolizing chamber. However, it is the examiner's position that one skilled in the art would recognize that these benefits would exist for in situ production of the particles as well, since the process of producing the particles is still the same and it is in production where these benefits exist. As the outlet stream from the reactor is an aerosol, to collect the particles out of the aerosol and then feed them into an aerosolizing chamber, as applicant has alleged would be obvious, would be inefficient. It would have been obvious at the time the invention was made to a person having ordinary skill in the art, in order to reduce the amount of steps and to perform the process in a more continuous,

automated fashion, to feed the particle stream leaving the reactor of Bi into the feed line of Akedo. The benefits of Bi would be present in this continuous method as well.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Additionally, Akedo teaches that it is known to spray ultrafine particles onto a substrate in order to form a film (column 2, lines 40-50). Bi teaches a process in which a stream of nano-sized particles are formed in an efficient, high production, manner. Therefore, it would have been obvious to use the apparatus of Bi in order produce ultrafine particles that are immediately sprayed onto a substrate. Without even taking into consideration which of the all ready known methods of particle spraying to use, this alone reads on some of the broadest claims.

In the previous Office Action, claims 30, 43, 45, 52, and 58 were rejected over Lehman in view of Akedo et al. and Bi et al., in further view of Kambe et al. Applicant argues that Lehman and Kambe do not make up for the deficiencies of the combination of Akedo and Bi. However, Lehman and Kambe were cited for teaching features that

pertain to these claims only. Akedo and Bi, as shown above, teach the limitations of the claims from which these claims depend. Bi produces an aerosol of nanoparticles. Akedo requires a feed of aerosol. Bi provides the aerosol in an efficient, high production manner. The combination would have been obvious.

In the previous Office Action, claims 31 and 32 were rejected over Tran et al. in view of Lehman in view of Akedo et al. and Bi et al., in further view of Kambe et al. Applicant argues that Tran does not make up for the deficiencies of the combination of Akedo and Bi. . However, Tran was cited for teaching features that pertain to these claims only. Akedo, Bi, Kambe, and Lehman, as shown above, teach the limitations of the claims from which these claims depend.

In the previous Office Action, claims 18-29, 39-41, 50 and 51 were rejected over Börner et al. in view of Bi et al. Applicant argues that Börner allegedly teaches to use a powder spraying apparatus that comprises a corona spray gun and a triboelectric spray gun and that it is well known that these spray guns use an aerosolizing chamber to form a powder aerosol that is fed to the electric nozzle. This argument is not found persuasive.

The paragraph cited by the applicant that allegedly teaches the use of corona spray guns and triboelectric spray guns reads that an "apparatus that *is suitable* for implementing the process is described, *for example*, in the German published..." and "spraying... *can be* achieved if... at least one of the application devices is a corona

spray gun and at least one of the application devices is a triboelectric spray gun” (emphasis added). It is the position of the examiner that this paragraph is provided as an example and does not limit the apparatus to comprising a corona and/or triboelectric spray gun.

The applicant argues that these spray guns, which have been shown only as a non-limiting example, require an aerosolizing chamber such that the nozzle is fed with an aerosol. Even if an aerosol is required as the feed to these spray guns, it has been shown above that the stream leaving the reactor of Bi is an aerosol, as it contains inert gas and nanoparticles. Therefore, to combine the two references would have been obvious.

In the previous Office Action, claims 53 and 54 were rejected over Börner et al. in view of Akedo et al. and Bi et al. Applicant argues that Börner does not make up for the deficiencies in Akedo and Bi. . However, Börner was cited for teaching features that pertain to these claims only. Akedo and Bi, as shown above, teach the limitations of the claims from which these claims depend.

Additionally, applicant argues that Börner operates on different principles than Akedo and Bi and is not clear on how Akedo and Bi would work to supply the particle streams of Börner. This argument is not persuasive.

Börner is used to show that when depositing two different types of powder coatings, separate spraying apparatuses should be used for each material while having the outlet charge controlled (figure 2). Separate apparatuses are used for a single

material as well (figure 1). Akedo teaches a process of spraying powder in order to coat a substrate that utilizes electrodes to control the charge of the stream. It has all ready been shown that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize the particle-producing method of Bi in order to produce the inlet for the Akedo apparatus. This combination of Akedo and Bi would have the same benefits of Bi alone in that it would provide the particles in a highly efficient manner, with a high production. To use separate Akedo apparatuses with the charge controlled by the electrodes and the modification taught by Bi in order to apply the same or dual material coatings of Börner would have been obvious. By doing so, one reaps the benefits applying the powder coating in a highly efficient manner with a high production.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B Fuller whose telephone number is (703) 308-6544. The examiner can normally be reached on Tuesday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and (703) 872-9311 for After Final communications.




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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



EBF

June 26, 2002



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